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<110> Petrukhin, Konstantin
 Caskey, C. Thomas
 Li, Wen
 Metzker, Michael L.

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<150> 60/129,274

<151> 1999-04-14

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<210> 3

<211> 846

<212> PRT

<213> Homo Sapiens

<400> 3

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Leu Glu Arg Pro Arg Gly Trp Ala Phe Ile Tyr His Ala Phe Val Phe
 35          40          45
Leu Leu Val Phe Gly Cys Leu Ile Leu Ser Val Phe Ser Thr Ile Pro
 50          55          60
Glu His Thr Lys Leu Ala Ser Ser Cys Leu Leu Ile Leu Glu Phe Val
 65          70          75          80
Met Ile Val Val Phe Gly Leu Glu Phe Ile Ile Arg Ile Trp Ser Ala

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| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| | | | | 85 | | | | | 90 | | | | | 95 | | | |
| Gly | Cys | Cys | Cys | Arg | Tyr | Arg | Gly | Trp | Gln | Gly | Arg | Leu | Arg | Phe | Ala | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| Arg | Lys | Pro | Phe | Cys | Val | Ile | Asp | Thr | Ile | Val | Leu | Ile | Ala | Ser | Ile | | |
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| Ala | Val | Val | Ser | Ala | Lys | Thr | Gln | Gly | Asn | Ile | Phe | Ala | Thr | Ser | Ala | | |
| | | 130 | | | | 135 | | | | | 140 | | | | | | |
| Leu | Arg | Ser | Leu | Arg | Phe | Leu | Gln | Ile | Leu | Arg | Met | Val | Arg | Met | Asp | | |
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| Ser | Lys | Glu | Leu | Ile | Thr | Ala | Trp | Tyr | Ile | Gly | Phe | Leu | Val | Leu | Ile | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| Phe | Ser | Ser | Phe | Leu | Val | Tyr | Leu | Val | Glu | Lys | Asp | Ala | Asn | Lys | Glu | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| Phe | Ser | Thr | Tyr | Ala | Asp | Ala | Leu | Trp | Trp | Gly | Thr | Ile | Thr | Leu | Thr | | |
| | | 210 | | | 215 | | | | | | 220 | | | | | | |
| Thr | Ile | Gly | Tyr | Gly | Asp | Lys | Thr | Pro | Leu | Thr | Trp | Leu | Gly | Arg | Leu | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| Leu | Ser | Ala | Gly | Phe | Ala | Leu | Leu | Gly | Ile | Ser | Phe | Phe | Ala | Leu | Pro | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| Ala | Gly | Ile | Leu | Gly | Ser | Gly | Phe | Ala | Leu | Lys | Val | Gln | Glu | Gln | His | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | |
| Arg | Gln | Lys | His | Phe | Glu | Lys | Arg | Arg | Asn | Pro | Ala | Ala | Asn | Leu | Ile | | |
| | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Gln | Cys | Val | Trp | Arg | Ser | Tyr | Ala | Ala | Asp | Glu | Lys | Ser | Val | Ser | Ile | | |
| | | 290 | | | | 295 | | | | 300 | | | | | | | |
| Ala | Thr | Trp | Lys | Pro | His | Leu | Lys | Ala | Leu | His | Thr | Cys | Ser | Pro | Thr | | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | | |
| Lys | Lys | Glu | Gln | Gly | Glu | Ala | Ser | Ser | Ser | Gln | Lys | Leu | Ser | Phe | Lys | | |
| | | | | 325 | | | | | 330 | | | | | 335 | | | |
| Glu | Arg | Val | Arg | Met | Ala | Ser | Pro | Arg | Gly | Gln | Ser | Ile | Lys | Ser | Arg | | |
| | | | 340 | | | | | 345 | | | | | 350 | | | | |
| Gln | Ala | Ser | Val | Gly | Asp | Arg | Arg | Ser | Pro | Ser | Thr | Asp | Ile | Thr | Ala | | |
| | | 355 | | | | | 360 | | | | | 365 | | | | | |
| Glu | Gly | Ser | Pro | Thr | Lys | Val | Gln | Lys | Ser | Trp | Ser | Phe | Asn | Asp | Arg | | |
| | | 370 | | | | 375 | | | | | 380 | | | | | | |
| Thr | Arg | Phe | Arg | Pro | Ser | Leu | Arg | Leu | Lys | Ser | Ser | Gln | Pro | Lys | Pro | | |
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| Val | Ile | Asp | Ala | Asp | Thr | Ala | Leu | Gly | Thr | Asp | Asp | Val | Tyr | Asp | Glu | | |
| | | | | 405 | | | | | 410 | | | | | 415 | | | |
| Lys | Gly | Cys | Gln | Cys | Asp | Val | Ser | Val | Glu | Asp | Leu | Thr | Pro | Pro | Leu | | |
| | | | 420 | | | | | 425 | | | | | 430 | | | | |
| Lys | Thr | Val | Ile | Arg | Ala | Ile | Arg | Ile | Met | Lys | Phe | His | Val | Ala | Lys | | |
| | | | 435 | | | | 440 | | | | | 445 | | | | | |
| Arg | Lys | Phe | Lys | Glu | Thr | Leu | Arg | Pro | Tyr | Asp | Val | Lys | Asp | Val | Ile | | |
| | | 450 | | | | 455 | | | | 460 | | | | | | | |
| Glu | Gln | Tyr | Ser | Ala | Gly | His | Leu | Asp | Met | Leu | Cys | Arg | Ile | Lys | Ser | | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | | |
| Leu | Gln | Thr | Arg | Val | Asp | Gln | Ile | Leu | Gly | Lys | Gly | Gln | Ile | Thr | Ser | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | |
| Asp | Lys | Lys | Ser | Arg | Glu | Lys | Ile | Thr | Ala | Glu | His | Glu | Thr | Thr | Asp | | |
| | | | 500 | | | | | 505 | | | | | 510 | | | | |
| Asp | Leu | Ser | Met | Leu | Gly | Arg | Val | Val | Lys | Val | Glu | Lys | Gln | Val | Gln | | |
| | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Ser | Ile | Glu | Ser | Lys | Leu | Asp | Cys | Leu | Leu | Asp | Ile | Tyr | Gln | Gln | Val | | |
| | | 530 | | | | 535 | | | | | 540 | | | | | | |


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          580          585          590
Ser Thr Ser Ala Asn Ile Ser Arg Gly Leu Gln Phe Ile Leu Thr Pro
          595          600          605
Asn Glu Phe Ser Ala Gln Thr Phe Tyr Ala Leu Ser Pro Thr Met His
610          615          620
Ser Gln Ala Thr Gln Val Pro Ile Ser Gln Ser Asp Gly Ser Ala Val
625          630          635          640
Ala Ala Thr Asn Thr Ile Ala Asn Gln Ile Asn Thr Ala Pro Lys Pro
          645          650          655
Ala Ala Pro Thr Thr Leu Gln Ile Pro Pro Pro Leu Pro Ala Ile Lys
          660          665          670
His Leu Pro Arg Pro Glu Thr Leu His Pro Asn Pro Ala Gly Leu Gln
          675          680          685
Glu Ser Ile Ser Asp Val Thr Thr Cys Leu Val Ala Ser Lys Glu Asn
690          695          700
Val Gln Val Ala Gln Ser Asn Leu Thr Lys Asp Arg Ser Met Arg Lys
705          710          715          720
Ser Phe Asp Met Gly Gly Glu Thr Leu Leu Ser Val Cys Pro Met Val
          725          730          735
Pro Lys Asp Leu Gly Lys Ser Leu Ser Val Gln Asn Leu Ile Arg Ser
          740          745          750
Thr Glu Glu Leu Asn Ile Gln Leu Ser Gly Ser Glu Ser Ser Ala Ser
          755          760          765
Arg Gly Ser Gln Asp Phe Tyr Pro Lys Trp Arg Glu Ser Lys Leu Phe
770          775          780
Ile Thr Asp Glu Glu Val Gly Pro Glu Glu Thr Glu Thr Asp Thr Phe
785          790          795          800
Asp Ala Ala Pro Gln Pro Ala Arg Glu Ala Ala Phe Ala Ser Asp Ser
          805          810          815
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<213> Homo Sapiens

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Gln Gly Glu Ala Gly Gly Gly Gly Ser Pro Arg Arg Leu Gly Leu Leu
          35          40          45
Gly Ser Pro Leu Pro Pro Gly Ala Pro Leu Pro Gly Pro Gly Ser Gly
50          55          60
Ser Gly Ser Ala Cys Gly Gln Arg Ser Ser Ala Ala His Lys Arg Tyr
65          70          75          80
Arg Arg Leu Gln Asn Trp Val Tyr Asn Val Leu Glu Arg Pro Arg Gly

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| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
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| Trp | Ala | Phe | Val | Tyr | His | Val | Phe | Ile | Phe | Leu | Leu | Val | Phe | Ser | Cys | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| Leu | Val | Leu | Ser | Val | Leu | Ser | Thr | Ile | Gln | Glu | His | Gln | Glu | Leu | Ala | |
| | | | 115 | | | | | 120 | | | | 125 | | | | |
| Asn | Glu | Cys | Leu | Leu | Ile | Leu | Glu | Phe | Val | Met | Ile | Val | Val | Phe | Gly | |
| | | | 130 | | | 135 | | | | | 140 | | | | | |
| Leu | Glu | Tyr | Ile | Val | Arg | Val | Trp | Ser | Ala | Gly | Cys | Cys | Cys | Arg | Tyr | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Arg | Gly | Trp | Gln | Gly | Arg | Phe | Arg | Phe | Ala | Arg | Lys | Pro | Phe | Cys | Val | |
| | | | | 165 | | | | | 170 | | | | | 175 | | |
| Ile | Asp | Phe | Ile | Val | Phe | Val | Ala | Ser | Val | Ala | Val | Ile | Ala | Ala | Gly | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| Thr | Gln | Gly | Asn | Ile | Phe | Ala | Thr | Ser | Ala | Leu | Arg | Ser | Met | Arg | Phe | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| Leu | Gln | Ile | Leu | Arg | Met | Val | Arg | Met | Asp | Arg | Arg | Gly | Gly | Thr | Trp | |
| | | 210 | | | 215 | | | | | | 220 | | | | | |
| Lys | Leu | Leu | Gly | Ser | Val | Val | Tyr | Ala | His | Ser | Lys | Glu | Leu | Ile | Thr | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| Ala | Trp | Tyr | Ile | Gly | Phe | Leu | Val | Leu | Ile | Phe | Ala | Ser | Phe | Leu | Val | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| Tyr | Leu | Ala | Glu | Lys | Asp | Ala | Asn | Ser | Asp | Phe | Ser | Ser | Tyr | Ala | Asp | |
| | | | 260 | | | | | 265 | | | | | 270 | | | |
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| | | 275 | | | | | 280 | | | | | 285 | | | | |
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| | | | | 325 | | | | | 330 | | | | | 335 | | |
| Lys | Arg | Arg | Met | Pro | Ala | Ala | Asn | Leu | Ile | Gln | Ala | Ala | Trp | Arg | Leu | |
| | | | 340 | | | | | 345 | | | | | 350 | | | |
| Tyr | Ser | Thr | Asp | Met | Ser | Arg | Ala | Tyr | Leu | Thr | Ala | Thr | Trp | Tyr | Tyr | |
| | | 355 | | | | | 360 | | | | | 365 | | | | |
| Tyr | Asp | Ser | Ile | Leu | Pro | Ser | Phe | Arg | Glu | Leu | Ala | Leu | Leu | Phe | Glu | |
| | | 370 | | | | 375 | | | | | 380 | | | | | |
| His | Val | Gln | Arg | Ala | Arg | Asn | Gly | Gly | Leu | Arg | Pro | Leu | Glu | Val | Arg | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | |
| Arg | Ala | Pro | Val | Pro | Asp | Gly | Ala | Pro | Ser | Arg | Tyr | Pro | Pro | Val | Ala | |
| | | | | 405 | | | | | 410 | | | | | 415 | | |
| Thr | Cys | His | Arg | Pro | Gly | Ser | Thr | Ser | Phe | Cys | Pro | Gly | Glu | Ser | Ser | |
| | | | 420 | | | | | 425 | | | | 430 | | | | |
| Arg | Met | Gly | Ile | Lys | Asp | Arg | Ile | Arg | Met | Gly | Ser | Ser | Gln | Arg | Arg | |
| | | 435 | | | | | 440 | | | | | 445 | | | | |
| Thr | Gly | Pro | Ser | Lys | Gln | Gln | Leu | Ala | Pro | Pro | Thr | Met | Pro | Thr | Ser | |
| | 450 | | | | 455 | | | | | | 460 | | | | | |
| Pro | Ser | Ser | Glu | Gln | Val | Gly | Glu | Ala | Thr | Ser | Pro | Thr | Lys | Val | Gln | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | |
| Lys | Ser | Trp | Ser | Phe | Asn | Asp | Arg | Thr | Arg | Phe | Arg | Ala | Ser | Leu | Arg | |
| | | | | 485 | | | | | 490 | | | | | 495 | | |
| Leu | Lys | Pro | Arg | Thr | Ser | Ala | Glu | Asp | Ala | Pro | Ser | Glu | Glu | Val | Ala | |
| | | | 500 | | | | | 505 | | | | 510 | | | | |
| Glu | Glu | Lys | Ser | Tyr | Gln | Cys | Glu | Leu | Thr | Val | Asp | Asp | Ile | Met | Pro | |
| | | 515 | | | | | 520 | | | | | 525 | | | | |
| Ala | Val | Lys | Thr | Val | Ile | Arg | Ser | Ile | Arg | Ile | Leu | Lys | Phe | Leu | Val | |
| | 530 | | | | | 535 | | | | | 540 | | | | | |

Ala Lys Arg Lys Phe Lys Glu Thr Leu Arg Pro Tyr Asp Val Lys Asp
 545 550 555 560
 Val Ile Glu Gln Tyr Ser Ala Gly His Leu Asp Met Leu Gly Arg Ile
 565 570 575
 Lys Ser Leu Gln Thr Arg Val Asp Gln Ile Val Gly Arg Gly Pro Gly
 580 585 590
 Asp Arg Lys Ala Arg Glu Lys Gly Asp Lys Gly Pro Ser Asp Ala Glu
 595 600 605
 Val Val Asp Glu Ile Ser Met Met Gly Arg Val Val Lys Val Glu Lys
 610 615 620
 Gln Val Gln Ser Ile Glu His Lys Leu Asp Leu Leu Leu Gly Phe Tyr
 625 630 635 640
 Ser Arg Cys Leu Arg Ser Gly Thr Ser Ala Ser Leu Gly Ala Val Gln
 645 650 655
 Val Pro Leu Phe Asp Pro Asp Ile Thr Ser Asp Tyr His Ser Pro Val
 660 665 670
 Asp His Glu Asp Ile Ser Val Ser Ala Gln Thr Leu Ser Ile Ser Arg
 675 680 685
 Ser Val Ser Thr Asn Met Asp
 690 695

<210> 5
 <211> 423
 <212> PRT
 <213> Homo Sapiens

<400> 5
 Ser Leu Leu Gly Pro Leu Ser Ser Ser Cys Arg Lys Tyr Arg Arg Gln
 1 5 10 15
 Asn Tyr Asn Val Leu Glu Arg Pro Arg Gly Trp Ala Phe Tyr His Phe
 20 25 30
 Phe Leu Leu Val Phe Cys Leu Leu Ser Val Ser Thr Ile Glu His Leu
 35 40 45
 Ala Cys Leu Leu Ile Leu Glu Phe Val Met Ile Val Val Phe Gly Leu
 50 55 60
 Glu Ile Arg Trp Ser Ala Gly Cys Cys Cys Arg Tyr Arg Gly Trp Gln
 65 70 75 80
 Gly Arg Arg Phe Ala Arg Lys Pro Phe Cys Val Ile Asp Ile Val Ala
 85 90 95
 Ser Ala Val Ala Thr Gln Gly Asn Ile Phe Ala Thr Ser Ala Leu Arg
 100 105 110
 Ser Arg Phe Leu Gln Ile Leu Arg Met Val Arg Met Asp Arg Arg Gly
 115 120 125
 Gly Thr Trp Lys Leu Leu Gly Ser Val Val Tyr Ala His Ser Lys Glu
 130 135 140
 Leu Ile Thr Ala Trp Tyr Ile Gly Phe Leu Val Leu Ile Phe Ser Phe
 145 150 155 160
 Leu Val Tyr Leu Glu Lys Asp Ala Asn Phe Ser Tyr Ala Asp Leu Trp
 165 170 175
 Trp Gly Thr Ile Thr Leu Thr Thr Ile Gly Tyr Gly Asp Lys Thr Pro
 180 185 190
 Thr Trp Leu Gly Arg Leu Ala Gly Phe Ala Leu Leu Gly Ile Ser Phe
 195 200 205
 Phe Ala Leu Pro Ala Gly Ile Leu Gly Ser Gly Phe Ala Leu Lys Val
 210 215 220
 Gln Glu Gln His Arg Gln Lys His Phe Glu Lys Arg Arg Pro Ala Ala

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225          230          235          240
Asn Leu Ile Gln Trp Arg Tyr Asp Ser Ala Thr Trp Leu Ala Leu Thr
          245          250          255
Cys Pro Thr Gly Glu Ser Ser Lys Arg Arg Met Ser Arg Gly Ser Lys
          260          265          270
Ala Ser Pro Ser Glu Ser Pro Thr Lys Val Gln Lys Ser Trp Ser Phe
          275          280          285
Asn Asp Arg Thr Arg Phe Arg Ser Leu Arg Leu Lys Pro Ala Ala Val
          290          295          300
Glu Lys Gln Cys Val Asp Pro Lys Thr Val Ile Arg Ile Arg Ile Lys
305          310          315          320
Phe Val Ala Lys Arg Lys Phe Lys Glu Thr Leu Arg Pro Tyr Asp Val
          325          330          335
Lys Asp Val Ile Glu Gln Tyr Ser Ala Gly His Leu Asp Met Leu Arg
          340          345          350
Ile Lys Ser Leu Gln Thr Arg Val Asp Gln Ile Gly Gly Asp Lys Arg
          355          360          365
Glu Lys Glu Asp Ser Met Gly Arg Val Val Lys Val Glu Lys Gln Val
370          375          380
Gln Ser Ile Glu Lys Leu Asp Leu Leu Tyr Leu Arg Gly Ser Ala Ser
385          390          395          400
Leu Gln Pro Phe Thr Ser Asp Tyr Ser Pro Val Asp Asp Ser Ser Ala
          405          410          415
Gln Ser Ser Arg Ser Ser Asn
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<210> 6
<211> 514
<212> PRT
<213> Homo Sapiens

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<400> 6
Met Val Gln Lys Ser Arg Asn Gly Gly Val Tyr Pro Gly Pro Ser Gly
1          5          10          15
Glu Lys Lys Leu Lys Val Gly Phe Val Gly Leu Asp Pro Gly Ala Pro
          20          25          30
Asp Ser Thr Arg Asp Gly Ala Leu Ile Ala Gly Ser Glu Ala Pro
          35          40          45
Lys Arg Gly Ser Ile Leu Ser Lys Pro Arg Ala Gly Gly Ala Gly Ala
50          55          60
Gly Lys Pro Pro Lys Arg Asn Ala Phe Tyr Arg Lys Leu Gln Asn Phe
65          70          75          80
Leu Tyr Asn Val Leu Glu Arg Pro Arg Gly Trp Ala Phe Ile Tyr His
          85          90          95
Ala Tyr Val Phe Leu Leu Val Phe Ser Cys Leu Val Leu Ser Val Phe
          100          105          110
Ser Thr Ile Lys Glu Tyr Glu Lys Ser Ser Glu Gly Ala Leu Tyr Ile
          115          120          125
Leu Glu Ile Val Thr Ile Val Val Phe Gly Val Glu Tyr Phe Val Arg
130          135          140
Ile Trp Ala Ala Gly Cys Cys Cys Arg Tyr Arg Gly Trp Arg Gly Arg
145          150          155          160
Leu Lys Phe Ala Arg Lys Pro Phe Cys Val Ile Asp Ile Met Val Leu
          165          170          175
Ile Ala Ser Ile Ala Val Leu Ala Ala Gly Ser Gln Gly Asn Val Phe
          180          185          190

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Ala Thr Ser Ala Leu Arg Ser Leu Arg Phe Leu Gln Ile Leu Arg Met
 195 200 205
 Ile Arg Met Asp Arg Arg Gly Thr Trp Lys Leu Leu Gly Ser Val
 210 215 220
 Val Tyr Ala His Ser Lys Glu Leu Val Thr Ala Trp Tyr Ile Gly Phe
 225 230 235 240
 Leu Cys Leu Ile Leu Ala Ser Phe Leu Val Tyr Leu Ala Glu Lys Gly
 245 250 255
 Glu Asn Asp His Phe Asp Thr Tyr Ala Asp Ala Leu Trp Trp Gly Leu
 260 265 270
 Ile Thr Leu Thr Thr Ile Gly Tyr Gly Asp Lys Tyr Pro Gln Thr Trp
 275 280 285
 Asn Gly Arg Leu Leu Ala Ala Thr Phe Thr Leu Ile Gly Val Ser Phe
 290 295 300
 Phe Ala Leu Pro Ala Gly Ile Leu Gly Ser Gly Phe Ala Leu Lys Val
 305 310 315 320
 Gln Glu Gln His Arg Gln Lys His Phe Glu Lys Arg Arg Asn Pro Ala
 325 330 335
 Ala Gly Leu Ile Gln Ser Ala Trp Arg Phe Tyr Ala Thr Asn Leu Ser
 340 345 350
 Arg Thr Asp Leu His Ser Thr Trp Gln Tyr Tyr Glu Arg Thr Val Thr
 355 360 365
 Val Pro Met Tyr Arg Leu Ile Pro Pro Leu Asn Gln Leu Glu Leu Leu
 370 375 380
 Arg Asn Leu Lys Ser Lys Ser Gly Leu Ala Phe Arg Lys Asp Pro Pro
 385 390 395 400
 Pro Glu Pro Ser Pro Ser Gln Lys Val Ser Leu Lys Asp Arg Val Phe
 405 410 415
 Ser Ser Pro Arg Gly Val Ala Ala Lys Gly Lys Gly Ser Pro Gln Ala
 420 425 430
 Gln Thr Val Arg Arg Ser Pro Ser Ala Asp Gln Ser Leu Glu Asp Ser
 435 440 445
 Pro Ser Lys Val Pro Lys Ser Trp Ser Phe Gly Asp Arg Ser Arg Ala
 450 455 460
 Arg Gln Ala Phe Arg Ile Lys Gly Ala Ala Ser Arg Gln Asn Ser Glu
 465 470 475 480
 Glu Ala Ser Leu Pro Gly Glu Asp Ile Val Asp Asp Lys Ser Cys Pro
 485 490 495
 Cys Glu Phe Val Thr Glu Asp Leu Thr Pro Gly Leu Lys Val Ser Ile
 500 505 510
 Arg Ala

<210> 7
 <211> 521
 <212> PRT
 <213> Homo Sapiens

<400> 7
 Met Gly Leu Lys Ala Arg Arg Ala Ala Gly Ala Ala Gly Gly Gly Gly
 1 5 10 15
 Asp Gly Gly Gly Gly Gly Gly Gly Ala Ala Asn Pro Ala Gly Gly Asp
 20 25 30
 Ala Ala Ala Ala Gly Asp Glu Glu Arg Lys Val Gly Leu Ala Pro Gly
 35 40 45
 Asp Val Glu Gln Val Thr Leu Ala Leu Gly Ala Gly Ala Asp Lys Asp

| | | |
|---|-----|-----|
| 50 | 55 | 60 |
| Gly Thr Leu Leu Leu Glu Gly Gly Gly Arg Asp Glu Gly Gln Arg Arg | | |
| 65 | 70 | 75 |
| Thr Pro Gln Gly Ile Gly Leu Leu Ala Lys Thr Pro Leu Ser Arg Pro | | 80 |
| | 85 | 90 |
| Val Lys Arg Asn Asn Ala Lys Tyr Arg Arg Ile Gln Thr Leu Ile Tyr | | 95 |
| | 100 | 105 |
| Asp Ala Leu Glu Arg Pro Arg Gly Trp Ala Leu Leu Tyr His Ala Leu | | 110 |
| | 115 | 120 |
| Val Phe Leu Ile Val Leu Gly Cys Leu Ile Leu Ala Val Leu Thr Thr | | 125 |
| | 130 | 135 |
| Phe Lys Glu Tyr Glu Thr Val Ser Gly Asp Trp Leu Leu Leu Leu Glu | | 140 |
| 145 | 150 | 155 |
| Thr Phe Ala Ile Phe Ile Phe Gly Ala Glu Phe Ala Leu Arg Ile Trp | | 160 |
| | 165 | 170 |
| Ala Ala Gly Cys Cys Cys Arg Tyr Lys Gly Trp Arg Gly Arg Leu Lys | | 175 |
| | 180 | 185 |
| Phe Ala Arg Lys Pro Leu Cys Met Leu Asp Ile Phe Val Leu Ile Ala | | 190 |
| | 195 | 200 |
| Ser Val Pro Val Val Ala Val Gly Asn Gln Gly Asn Val Leu Ala Thr | | 205 |
| | 210 | 215 |
| Ser Leu Arg Ser Leu Arg Phe Leu Gln Ile Leu Arg Met Leu Arg Met | | 220 |
| 225 | 230 | 235 |
| Asp Arg Arg Gly Gly Thr Trp Lys Leu Leu Gly Ser Ala Ile Cys Ala | | 240 |
| | 245 | 250 |
| His Ser Lys Glu Leu Ile Thr Ala Trp Tyr Ile Gly Phe Leu Thr Leu | | 255 |
| | 260 | 265 |
| Ile Leu Ser Ser Phe Leu Val Tyr Leu Val Glu Lys Asp Val Pro Glu | | 270 |
| | 275 | 280 |
| Val Asp Ala Gln Gly Glu Glu Met Lys Glu Glu Phe Glu Thr Tyr Ala | | 285 |
| | 290 | 295 |
| Asp Ala Leu Trp Trp Gly Leu Ile Thr Leu Ala Thr Ile Gly Tyr Gly | | 300 |
| 305 | 310 | 315 |
| Asp Lys Thr Pro Lys Thr Trp Glu Gly Arg Leu Ile Ala Ala Thr Phe | | 320 |
| | 325 | 330 |
| Ser Leu Ile Gly Val Ser Phe Phe Ala Leu Pro Ala Gly Ile Leu Gly | | 335 |
| | 340 | 345 |
| Ser Gly Leu Ala Leu Lys Val Gln Glu Gln His Arg Gln Lys His Phe | | 350 |
| | 355 | 360 |
| Glu Lys Arg Arg Lys Pro Ala Glu Leu Ile Gln Ala Ala Trp Arg | | 365 |
| | 370 | 375 |
| Tyr Tyr Ala Thr Asn Pro Asn Arg Ile Asp Leu Val Ala Thr Trp Arg | | 380 |
| 385 | 390 | 395 |
| Phe Tyr Glu Ser Val Val Ser Phe Pro Phe Phe Arg Lys Glu Gln Leu | | 400 |
| | 405 | 410 |
| Glu Ala Ala Ser Ser Gln Lys Leu Gly Leu Leu Asp Arg Val Arg Leu | | 415 |
| | 420 | 425 |
| Ser Asn Pro Arg Gly Ser Asn Thr Lys Gly Lys Leu Phe Thr Pro Leu | | 430 |
| | 435 | 440 |
| Asn Val Asp Ala Ile Glu Glu Ser Pro Ser Lys Glu Pro Lys Pro Val | | 445 |
| | 450 | 455 |
| Gly Leu Asn Asn Lys Glu Arg Phe Arg Thr Ala Phe Arg Met Lys Ala | | 460 |
| 465 | 470 | 475 |
| Tyr Ala Phe Trp Gln Ser Ser Glu Asp Ala Gly Thr Gly Asp Pro Met | | 480 |
| | 485 | 490 |
| Ala Glu Asp Arg Gly Tyr Gly Asn Asp Phe Pro Ile Glu Asp Met Ile | | 495 |
| | 500 | 505 |
| | | 510 |

Pro Thr Leu Lys Ala Ala Ile Arg Ala
 515 520

<210> 8
 <211> 142
 <212> PRT
 <213> Homo Sapiens

<400> 8
 Arg Gln Tyr Leu Glu Arg Pro Gly Trp Tyr His Phe Leu Val Cys Leu
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 Val Thr Leu Glu Phe Gly Glu Arg Trp Ala Gly Cys Tyr Gly Gly Arg
 20 25 30
 Phe Ala Arg Lys Pro Asp Val Ala Ser Val Gly Ala Thr Ser Arg Arg
 35 40 45
 Phe Leu Gln Ile Leu Arg Met Asp Arg Gly Gly Thr Trp Leu Leu Gly
 50 55 60
 Ser His Glu Leu Thr Tyr Ile Gly Phe Leu Leu Ile Ser Val Tyr Leu
 65 70 75 80
 Glu Lys Phe Tyr Ala Asp Leu Trp Trp Gly Thr Thr Ile Gly Tyr Gly
 85 90 95
 Asp Lys Pro Thr Trp Gly Phe Ser Phe Phe Ala Leu Pro Ala Gly Ile
 100 105 110
 Leu Gly Ser Gly Ala Leu Lys Val Gln Arg Gln Lys His Phe Ala Ala
 115 120 125
 Leu Ile Gln Trp Arg Tyr Thr Trp Leu Ser Lys Glu Ala Ile
 130 135 140

<210> 9
 <211> 17
 <212> DNA
 <213> Homo Sapiens

<400> 9
 gggggcccg atgagcc 17

<210> 10
 <211> 21
 <212> DNA
 <213> Homo Sapiens

<400> 10
 gaagaactta tttcagtttg a 21

<210> 11
 <211> 25
 <212> DNA
 <213> Homo Sapiens

<400> 11
 ttttctcctt gtctttgggtt gcttg 25

<210> 12
 <211> 27
 <212> DNA

<213> Homo Sapiens

<400> 12
ccatccta at acgactcact atagggc 27

<210> 13
<211> 23
<212> DNA
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<400> 13
cctcaagttg cctcttgatc ctg 23

<210> 14
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<400> 14
actcactata gggctcgagc ggc 23

<210> 15
<211> 23
<212> DNA
<213> Homo Sapiens

<400> 15
caggatcaag aggcaacttg agg 23

<210> 16
<211> 28
<212> DNA
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<400> 16
ccaattttgt gtgctcaggg atggtaga 28

<210> 17
<211> 18
<212> DNA
<213> Homo Sapiens

<400> 17
gacacagccc ttggcact 18

<210> 18
<211> 26
<212> DNA
<213> Homo Sapiens

<400> 18
gatgatgtat atgatgaaaa aggatg 26

<210> 19
<211> 23
<212> DNA
<213> Homo Sapiens

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| <400> 19 ctgatagctc gaatgacagt ttt | 23 |
| <210> 20 <211> 26 <212> DNA <213> Homo Sapiens | |
| <400> 20 aagtgggtggg gtgaggtctt ccaactg | 26 |
| <210> 21 <211> 24 <212> DNA <213> Homo Sapiens | |
| <400> 21 agaattatga aatttcatgt tgca | 24 |
| <210> 22 <211> 23 <212> DNA <213> Homo Sapiens | |
| <400> 22 aaacggaagt ttaaggaaac att | 23 |
| <210> 23 <211> 23 <212> DNA <213> Homo Sapiens | |
| <400> 23 acgtgtttgt tggcttttaa ttc | 23 |
| <210> 24 <211> 21 <212> DNA <213> Homo Sapiens | |
| <400> 24 tacacaacat gtccagatga c | 21 |
| <210> 25 <211> 22 <212> DNA <213> Homo Sapiens | |
| <400> 25 tgatcaaatt cttggaaaag gg | 22 |
| <210> 26 <211> 23 <212> DNA <213> Homo Sapiens | |

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| <400> 26 tcacatcaga taagaagagc cga | 23 |
| <210> 27 <211> 21 <212> DNA <213> Homo Sapiens | |
| <400> 27 gtttttcaac cttgaccacc c | 21 |
| <210> 28 <211> 23 <212> DNA <213> Homo Sapiens | |
| <400> 28 agcatactga gatcgtctgt ggt | 23 |
| <210> 29 <211> 25 <212> DNA <213> Homo Sapiens | |
| <400> 29 aattccaaaa gtgtctgtct ctgtc | 25 |
| <210> 30 <211> 22 <212> DNA <213> Homo Sapiens | |
| <400> 30 ggacccacct cttcatcagt ta | 22 |
| <210> 31 <211> 20 <212> DNA <213> Homo Sapiens | |
| <400> 31 ggaagactga ggtttgctcg | 20 |
| <210> 32 <211> 20 <212> DNA <213> Homo Sapiens | |
| <400> 32 ggcaggaagt gcaaagaaag | 20 |
| <210> 33 <211> 20 <212> DNA <213> Homo Sapiens | |
| <400> 33 | |

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| <210> 34 | |
| <211> 25 | |
| <212> DNA | |
| <213> Homo Sapiens | |
| <400> 34 | |
| cccaggcttt acactttatg cttcc | 25 |
| <210> 35 | |
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| ccagggtttt ccagtcacg ac | 22 |
| <210> 36 | |
| <211> 25 | |
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| <213> Homo Sapiens | |
| <400> 36 | |
| ttgtgtggaa ttgtgagcgg ataac | 25 |
| <210> 37 | |
| <211> 20 | |
| <212> DNA | |
| <213> Homo Sapiens | |
| <400> 37 | |
| ctttctttgc acttcctgcc | 20 |
| <210> 38 | |
| <211> 20 | |
| <212> DNA | |
| <213> Homo Sapiens | |
| <400> 38 | |
| aacacagaag ggctttcgag | 20 |
| <210> 39 | |
| <211> 20 | |
| <212> DNA | |
| <213> Homo Sapiens | |
| <400> 39 | |
| cagtcttcct tgccatcctc | 20 |
| <210> 40 | |
| <211> 20 | |
| <212> DNA | |
| <213> Homo Sapiens | |
| <400> 40 | |
| gcagcccaa caactttaca | 20 |

<210> 41
 <211> 20
 <212> DNA
 <213> Homo Sapiens

<400> 41
 cattttcctt ggaggcaaca

20

<210> 42
 <211> 20
 <212> DNA
 <213> Homo Sapiens

<400> 42
 gccagaaact ctgcacccta

20

<210> 43
 <211> 421
 <212> PRT
 <213> Homo Sapiens

<400> 43
 Met Glu Thr Arg Gly Ser Arg Leu Thr Gly Gly Gln Gly Arg Val Tyr
 1 5 10 15
 Asn Phe Leu Glu Arg Pro Thr Gly Trp Lys Cys Phe Val Tyr His Phe
 20 25 30
 Ala Val Phe Leu Ile Val Leu Val Cys Leu Ile Phe Ser Val Leu Ser
 35 40 45
 Thr Ile Glu Gln Tyr Ala Ala Leu Ala Thr Gly Thr Leu Phe Trp Met
 50 55 60
 Glu Ile Val Leu Val Val Phe Phe Gly Thr Glu Tyr Val Val Arg Leu
 65 70 75 80
 Trp Ser Ala Gly Cys Arg Ser Lys Tyr Val Gly Leu Trp Gly Arg Leu
 85 90 95
 Arg Phe Ala Arg Lys Pro Ile Ser Ile Ile Asp Leu Ile Val Val Val
 100 105 110
 Ala Ser Met Val Val Leu Cys Val Gly Ser Lys Gly Gln Val Phe Ala
 115 120 125
 Thr Ser Ala Ile Arg Gly Ile Arg Phe Leu Gln Ile Leu Arg Met Leu
 130 135 140
 His Val Asp Arg Gln Gly Gly Thr Trp Arg Leu Leu Gly Ser Val Val
 145 150 155 160
 Phe Ile His Arg Gln Glu Leu Ile Thr Thr Leu Tyr Ile Gly Phe Leu
 165 170 175
 Gly Leu Ile Phe Ser Ser Tyr Phe Val Tyr Leu Ala Glu Lys Asp Ala
 180 185 190
 Val Asn Glu Ser Gly Arg Val Glu Phe Gly Ser Tyr Ala Asp Ala Leu
 195 200 205
 Trp Trp Gly Val Val Thr Val Thr Thr Ile Gly Tyr Gly Asp Lys Val
 210 215 220
 Pro Gln Thr Trp Val Gly Lys Thr Ile Ala Ser Cys Phe Ser Val Phe
 225 230 235 240
 Ala Ile Ser Phe Phe Ala Leu Pro Ala Gly Ile Leu Gly Ser Gly Phe
 245 250 255
 Ala Leu Lys Val Gln Gln Lys Gln Arg Gln Lys His Phe Asn Arg Gln
 260 265 270

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Ile Pro Ala Ala Ala Ser Leu Ile Gln Thr Ala Trp Arg Cys Tyr Ala
      275                      280                285
Ala Glu Asn Pro Asp Ser Ser Thr Trp Lys Ile Tyr Ile Arg Lys Ala
      290                      295                300
Pro Arg Ser His Thr Leu Leu Ser Pro Ser Pro Lys Pro Lys Lys Ser
305                      310                315                320
Val Val Val Lys Lys Lys Lys Phe Lys Leu Asp Lys Asp Asn Gly Val
      325                      330                335
Thr Pro Gly Glu Lys Met Leu Thr Val Pro His Ile Thr Cys Asp Pro
      340                      345                350
Pro Glu Glu Arg Arg Leu Asp His Phe Ser Val Asp Gly Tyr Asp Ser
      355                      360                365
Ser Val Arg Lys Ser Pro Thr Leu Leu Glu Val Ser Met Pro His Phe
      370                      375                380
Met Arg Thr Asn Ser Phe Ala Glu Asp Leu Asp Leu Glu Gly Glu Thr
385                      390                395                400
Leu Leu Thr Pro Ile Thr His Ile Ser Gln Leu Arg Glu His His Arg
      405                      410                415
Ala Thr Ile Lys Val
      420

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